



PATENT

In re Application of:

Gabor C. Temes, et al.

Serial No.: 10/806,598

Filed: 03/23/2004

Title: "Switched Capacitor Signal Scaling Circuit"

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§
§
§

Group Art Unit: 2816

Examiner: Dinh Thanh Le

Atty. Docket No.: 068354.1173

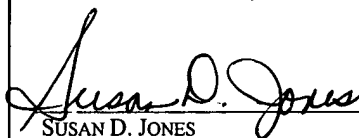
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAIL STOP ISSUE FEE
Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING VIA EXPRESS MAIL

PURSUANT TO 37 C.F.R. § 1.10, I HEREBY CERTIFY THAT I HAVE INFORMATION AND A REASONABLE BASIS FOR BELIEF THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE U.S. POSTAL SERVICE AS EXPRESS MAIL POST OFFICE TO ADDRESSEE, ON THE DATE BELOW, AND IS ADDRESSED TO:

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SUSAN D. JONES

3.24.2006
MARCH 24, 2006

DATE OF MAILING:
EXPRESS MAIL LABEL:

March 24, 2006
EV778536949US

OFFICIAL COMMUNICATION

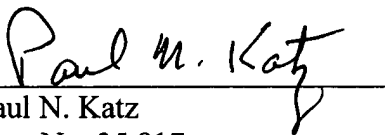
Dear Sir:

Applicants respectfully submit the following Official Communication and a copy of a PCT Search Report and Opinion referenced in an Information Disclosure Statement (IDS), submitted December 22, 2005. The PCT Search Report was either submitted with the IDS and lost in the Patent Office or inadvertently, without deceptive intent, not included with the original IDS. All of the references cited in this PCT Search Report and Opinion have been reviewed

during examination by the United States Patent Office and present Claims 21-32 have been found allowable over those references. Furthermore the claims examined in the PCT Search Report and Opinion were Claims 1-20 which were subsequently canceled and replaced with allowed Claims 21-32. Applicants respectfully request that the enclosed copy of the PCT Search Report and Opinion be entered into the file of the above referenced application.

Applicants believe that there are no fees due in association with the filing of this Communication. However, should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefore, and direct that any and all fees due are charged to Baker Botts L.L.P. **Deposit Account No. 02-0383, (formerly Baker & Botts, L.L.P.) Order Number 068354.1173.**

Respectfully submitted,
BAKER BOTTS L.L.P. (023640)

By: 
Paul N. Katz
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910 Louisiana Street
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ATTORNEY FOR APPLICANTS

March 24, 2006



CERTIFICATE OF MAILING VIA EXPRESS MAIL

PURSUANT TO 37 C.F.R. § 1.10, I HEREBY CERTIFY THAT I HAVE A REASONABLE BASIS FOR BELIEF THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS EXPRESS MAIL "POST OFFICE TO ADDRESSEE," AND IS ADDRESSED TO:

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Susan D. Jones 3.24.2006
SUSAN D. JONES MARCH 24, 2006

MARCH 24, 2006

DATE OF MAILING

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EXPRESS MAIL LABEL

U.S.S.N.:

10/806,598

FILING DATE:

MARCH 23, 2004

APPLICANT:

GABOR C. TEMES, ET AL.

GROUP ART UNIT:

2816

EXAMINER:

DINH THANH LE

ATTORNEY DOCKET NO.

068354.1173

TITLE:

"SWITCHED CAPACITOR SIGNAL SCALING CIRCUIT"

INCLUDED IN THIS MAILING FOR THE ABOVE-REFERENCED PATENT APPLICATION ARE:

1. OFFICIAL COMMUNICATION;
2. PCT/US2005/009159 DATED MAY 25, 2005;
3. ISSUE/PUBLICATION FEE TRANSMITTAL PTOL-85 WITH DUPLICATE COPY FOR FEE PROCESSING;
4. CHECK No. 959246 IN THE AMOUNT OF \$1,700.00 FOR ISSUE/PUBLICATION FEE;
5. TWO (2) SHEETS FORMAL DRAWINGS; AND
6. RETURN POSTCARD TO ACKNOWLEDGE RECEIPT OF THESE ITEMS.

ATTORNEY CONTACT:

PAUL N. KATZ

REG. No. 35,917

BAKER BOTTS L.L.P.

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PTO CUSTOMER NUMBER LABEL: **023640**



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MAR 24 2006



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FROM: (PLEASE PRINT) PHONE 713, 229. 1343
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Papers filed herewith on: 3.24.2006
 DOCKET NO.: 068354.1173
 ATTY/SEC.: PNE/pd
 APPLICANT(S): Jernigan et al.
 USSN: 10/804,598 FILED: 3.23.2004
 PAT NO.: N/A

☐ New Application with Transmittal Letter
☐ Utility ☐ Design ☐ CIP ☐ Provisional
☐ Filing Under 37 CFR 1.53(b) ☐ CONT ☐ DIV
☐ Filing Under 37 CFR 1.114(RCE)
☐ Filing Under 37 CFR 1.53(d) (CPA)
☐ Specification Consisting of: _____ pages
☐ Declaration
☐ Power of Attorney
☐ Assignment / Cover Letter
☐ Letter to Official Draftsman
☐ Drawings 2 Sheets ☒ Formal ☐ Informal ☐ Red-ink
☐ Priority Document(s) _____
☐ Amendment:
☐ Transmittal Ltr ☐ Large Entity ☐ Small Entity
☐ Response _____
☐ Information Disc. Stmt. PTO-1449(s) _____ re(s)
☐ Notice of Appeal ☐ Appeal Brief
☐ Issue Fee Transmittal PTO-85 w/ dup. copy
☐ FEES: 04/13/2006 \$1,700.00
☒ Other: Official Copy of action w/ PTO/USDOJ
 Original Copy of Mailing 001/59

Receipt is hereby acknowledged of the papers filed as indicated in connection with the above identified case. COMMISSIONER FOR PATENTS
 Due Date: 4.13.2006
 Express Mail Lab EV778536949US

MTI-1880-US.O

PRESS HARD. YOU ARE MAKING 3 COPIES.

Filed 11/23/05 Attorney TEP
Docket No. 068354.1173 US
Due Date: 20-Sep-05
Action: Review Foreign Art/SuppTOS
(3 mos.)

PATENT COOPERATION TREATY

Docketed 6/24 Attorney mtm
Docket No. 068354.1567
Due Date: Oct. 19 Demand At-34
Action: 20-Aug 23-Jan-06

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

To:
BAKER BOTTS L.L.P.
Attn. Slayden, Bruce W. II
98 San Jacinto Blvd.
1500 San Jacinto Center
Austin, TX 78701
UNITED STATES OF AMERICA

(PCT Rule 44.1)

Date of mailing (day/month/year) 20/06/2005	
Applicant's or agent's file reference 068354.1567	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US2005/009159	International filing date (day/month/year) 18/03/2005
Applicant MICROCHIP TECHNOLOGY INCORPORATED	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.


The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority

 European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Alexandra Voyé-Piccoli

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 068354.1567	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/US2005/009159	International filing date (day/month/year) 18/03/2005	(Earliest) Priority Date (day/month/year) 23/03/2004
Applicant MICROCHIP TECHNOLOGY INCORPORATED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 3

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2005/009159

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H03M3/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H03M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 140 950 A (OPRESCU ET AL) 31 October 2000 (2000-10-31) column 3, lines 22-47; figures 4-6 column 6, line 20 - column 10, line 6; claim 1	1-20
Y	US 6 433 712 B1 (OHNHAEUSER FRANK ET AL) 13 August 2002 (2002-08-13) column 2, lines 14-52; figures 1-8, 10A, 10B column 3, line 28 - column 9, line 9	1-20
A	US 6 147 522 A (RHODE ET AL) 14 November 2000 (2000-11-14) column 1, lines 49-63; figures 5A-7 column 8, lines 45-62	1-20
	----- -/-- -----	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- * "A" document defining the general state of the art which is not considered to be of particular relevance
- * "E" earlier document but published on or after the international filing date
- * "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- * "O" document referring to an oral disclosure, use, exhibition or other means
- * "P" document published prior to the international filing date but later than the priority date claimed

- * "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- * "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- * "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * "&" document member of the same patent family

Date of the actual completion of the international search

25 May 2005

Date of mailing of the international search report

20/06/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Brosa Gonzalez, A

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2005/009159

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 037 887 A (WU ET AL) 14 March 2000 (2000-03-14) column 3, line 36 - column 10, line 22; claims 1,13,22,24-27; figures 1-3B -----	1-20
A	US 5 729 232 A (FUJIMORI ET AL) 17 March 1998 (1998-03-17) column 6, line 36 - column 9, line 5; figures 6-8 -----	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/009159

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6140950	A	31-10-2000	EP 0981205 A2	23-02-2000
US 6433712	B1	13-08-2002	EP 1280278 A1	29-01-2003
			JP 2003060505 A	28-02-2003
US 6147522	A	14-11-2000	NONE	
US 6037887	A	14-03-2000	NONE	
US 5729232	A	17-03-1998	JP 10070465 A	10-03-1998

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2005/009159

International filing date (day/month/year)
18.03.2005

Priority date (day/month/year)
23.03.2004

International Patent Classification (IPC) or both national classification and IPC
H03M3/02

Applicant
MICROCHIP TECHNOLOGY INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Brosa Gonzalez, A

Telephone No. +49 89 2399-5931



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/009159

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/009159

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-20
	No: Claims	
Inventive step (IS)	Yes: Claims	1-20
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement.**

1 Reference is made to the following documents:

D1 : US 6 140 950 A (OPRESCU ET AL) 31 October 2000 (2000-10-31)

D2 : US 6 433 712 B1 (OHNHAEUSER FRANK ET AL) 13 August 2002 (2002-08-13)

2 INDEPENDENT CLAIM 1

2.1 The present application does not meet the criteria of Article **33(1)** PCT, because the subject matter of claim **1** does not involve an inventive step in the sense of Article **33(3)** PCT.

2.1.1 Document **D1**, which is considered to represent the most relevant state of the art to the subject matter of claim **1**, discloses (the references in parentheses applying to this document) a signal scaling circuit (abstract), comprising:

- a plurality of X switched capacitor circuits operably coupled together (col. 3, lines 29-47 and Fig. 4, switched capacitor circuits associated to C_{U1} , C_{U2} and C_{U3});
- the X switched capacitor circuits operable to receive a signal from an input source (Fig. 4, V_{INPUT}), a reference source (Fig. 4, $-V_{REF}$) and a bias source (Fig. 4, V_{BIAS}) and further operable to communicate an output signal to an output circuit (Fig. 4, connection of the switched capacitor circuits, through $S12$, $S15$ and $S18$, operational amplifier 72 and feedback capacitor C_F to output node V_{OUT}); and
- the X switched capacitor circuits responsive to control circuitry (col. 6, lines 36-45 and Fig. 4, control circuit 74), the control circuitry operable to selectively couple the X switched capacitor circuits to the input source, reference source and bias source (from col. 6, line 46 to col. 8, line 7) such that the output signal communicated to the output circuit includes a portion N/M , where $N < M$, of the input signal (col. 3, lines 29-47 and claim 1).

- 2.1.2 The subject-matter of independent claim **1** differs from the disclosure of **D1** in that the number of switched capacitor circuits X is equal to M .
- 2.1.3 The problem to be solved by the present invention may therefore be regarded as how to obtain a controllable and accurate reduction in the amplitude of the input signal in order to obtain an accurate A/D conversion, which is also efficient in cost.
- 2.1.4 In view of **D2** the solution proposed in claim **1** of the present application cannot be considered as involving an inventive step (Article **33(3)** PCT), because it discloses an accurate A/D conversion which allows an output that is a scaled version of the input by an N/M factor (see from col. 4, line 41 to col. 8, line 63, equations 5, 6, 10, 11 and Figs. 1-8, 10A, 10B), being $N < M$ and M proportional to the number of switched capacitor circuits.
- 2.1.5 Therefore the features disclosed in **D1** and **D2** would be combined by the skilled person, without exercise of any inventive skills in order to solve the problem posed. The proposed solution in independent claim **1** thus cannot be considered inventive (Article **33(3)** PCT).

3 INDEPENDENT CLAIM 9

- 3.1 The present application does not meet the criteria of Article **33(1)** PCT, because the subject matter of claim **9** does not involve an inventive step in the sense of Article **33(3)** PCT.
- 3.1.1 Document **D1**, which is considered to represent the most relevant state of the art to the subject matter of claim **9**, discloses (the references in parentheses applying to this document) a circuit for generating at an output node an output signal including a scale factor N/M of an input signal (abstract), the circuit comprising:
- an input node operable to receive an input signal from an input signal source (Fig. 4, V_{INPUT});
 - a reference node operable to receive a reference signal from a reference signal source (Fig. 4, $-V_{REF}$);

- a bias node operable to receive a bias signal from a bias signal source (Fig. 4, V_{BIAS});
- X switched capacitor circuits selectively coupled to the input signal node, reference node, bias node and output node (col. 3, lines 29-47 and Fig. 4, switched capacitor circuits associated to C_{U1} , C_{U2} and C_{U3}); and
- control circuitry coupled to the X switched capacitor circuits (col. 6, lines 36-45 and Fig. 4, control circuit 74), the control circuitry and the X switched capacitor circuits cooperating to create a first subset of N switched capacitor circuits and a second subset of switched capacitor circuits (from col. 6, line 46 to col. 8, line 7), and wherein the N switched capacitor circuits selectively sample the reference signal and the input signal and the second subset of switched capacitor circuits selectively sample the reference signal (from col. 6, line 46 to col. 8, line 7) such that the output signal at the output node includes the scale factor N/M of the input signal (col. 3, lines 29-47 and claim 1).

3.1.2 The subject-matter of independent claim 9 differs from the disclosure of D1 in that

- the number of switched capacitor circuits X is equal to M; and
- the second subset of switched capacitor circuits is equal to M-N.

3.1.3 The problem to be solved by the present invention may therefore be regarded as how to obtain a controllable and accurate reduction in the amplitude of the input signal in order to obtain an accurate A/D conversion, which is also efficient in cost.

3.1.4 In view of D2 the solution proposed in claim 9 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT), because it discloses an accurate A/D conversion which allows an output that is a scaled version of the input by an N/M factor (see from col. 4, line 41 to col. 8, line 63, equations 5, 6, 10, 11 and Figs. 1-8, 10A, 10B), being $N < M$ and M proportional to the number of switched capacitor circuits.

3.1.5 Therefore the features disclosed in D1 and D2 would be combined by the skilled person, without exercise of any inventive skills in order to solve the problem posed.

The proposed solution in independent claim **9** thus cannot be considered inventive (Article **33(3)** PCT).

4 INDEPENDENT CLAIM 16

4.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject matter of claim **16** does not involve an inventive step in the sense of Article **33(3)** PCT.

4.1.1 Document **D1**, which is considered to represent the most relevant state of the art to the subject matter of claim **16**, discloses (the references in parentheses applying to this document) a signal processing apparatus (abstract), comprising:

- an input node operable to receive an input signal (Fig. 4, V_{INPUT});
- a reference node operable to receive a reference signal (Fig. 4, $-V_{REF}$);
- a bias node operable to receive a bias signal (Fig. 4, V_{BIAS});
- an output node operable to communicate an output signal to an output circuit (Fig. 4, V_{OUT});
- a plurality of X switched capacitor circuits operably coupled to the input node, reference node, bias node and output node (col. 3, lines 29-47 and Fig. 4, switched capacitor circuits associated to C_{U1} , C_{U2} and C_{U3}), each switched capacitor having substantially equivalent capacitance C/M (col. 5, lines 44-49); and
- control circuitry coupled to the X switched capacitor circuits (col. 6, lines 36-45 and Fig. 4, control circuit 74), the control circuitry operable to divide the X switched capacitor circuits into a subset of N switched capacitor circuits and a second subset of switched capacitor circuits (from col. 6, line 46 to col. 8, line 7).

4.1.2 The subject-matter of independent claim **16** differs from the disclosure of **D1** in that

- the number of switched capacitor circuits X is equal to M; and
- the second subset of switched capacitor circuits is equal to M-N;
- the control circuit is further operable to cause each of the N switched

capacitor circuits to deliver a signal approximating (C/M)(reference signal-input signal) and each of the M-N switched capacitor circuits to deliver a signal approximating (C/M)(reference signal) to the output node.

- 4.1.3 The problem to be solved by the present invention may therefore be regarded as how to obtain a controllable and accurate reduction in the amplitude of the input signal in order to obtain an accurate A/D conversion, which is also efficient in cost.
- 4.1.4 In view of **D2** the solution proposed in claim **16** of the present application cannot be considered as involving an inventive step (Article **33(3)** PCT), because it discloses an accurate A/D conversion which allows an output that is a scaled version of the input by an N/M factor (see from col. 4, line 41 to col. 8, line 63, equations 5, 6, 10, 11 and Figs. 1-8, 10A, 10B), being $N < M$ and M proportional to the number of switched capacitor circuits.
- 4.1.5 Therefore the features disclosed in **D1** and **D2** would be combined by the skilled person, without exercise of any inventive skills in order to solve the problem posed. The proposed solution in independent claim 16 thus cannot be considered inventive (Article **33(3)** PCT).

5 INDEPENDENT CLAIM 20

- 5.1 The present application does not meet the criteria of Article **33(1)** PCT, because the subject matter of claim **20** does not involve an inventive step in the sense of Article **33(3)** PCT.
- 5.1.1 Document **D1**, which is considered to represent the most relevant state of the art to the subject matter of claim **20**, discloses (the references in parentheses applying to this document) a method of scaling an input signal (abstract), comprising:
- from a set of X switched capacitor circuits (col. 3, lines 29-47 and Fig. 4, switched capacitor circuits associated to C_{U1} , C_{U2} and C_{U3}), selectively coupling a first and a second subset of switched capacitor circuits to an input source (Fig. 4, V_{INPUT}), a reference source (Fig. 4, $-V_{REF}$) and a bias source

(Fig. 4, V_{BIAS}), and

- communicating an output signal including a scale factor N/M of the input signal (col. 3, lines 29-47 and claim 1) to an output node in each clock cycle (from col. 6, line 46 to col. 8, line 7).

5.1.2 The subject-matter of independent claim **20** differs from the disclosure of **D1** in that the number of switched capacitor circuits X is equal to M .

5.1.3 The problem to be solved by the present invention may therefore be regarded as how to obtain a controllable and accurate reduction in the amplitude of the input signal in order to obtain an accurate A/D conversion, which is also efficient in cost.

5.1.4 In view of **D2** the solution proposed in claim **20** of the present application cannot be considered as involving an inventive step (Article **33(3)** PCT), because it discloses an accurate A/D conversion which allows an output that is a scaled version of the input by an N/M factor (see from col. 4, line 41 to col. 8, line 63, equations 5, 6, 10, 11 and Figs. 1-8, 10A, 10B), being $N < M$ and M proportional to the number of switched capacitor circuits.

5.1.5 Therefore the features disclosed in **D1** and **D2** would be combined by the skilled person, without exercise of any inventive skills in order to solve the problem posed. The proposed solution in independent claim **20** thus cannot be considered inventive (Article **33(3)** PCT).

6 DEPENDENT CLAIMS 2-8, 10-15, 17-19

Dependent claims **2-8, 10-15, 17-19** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article **33(2)** and **(3)** PCT), the reasons being as following:

- the additional features defined in claims **2, 13, 18** and **19** are disclosed in **D2** (from col. 4, line 41 to col. 8, line 63). The skilled person would then combine the selective coupling of **D2** with the scaling circuit of **D1**, thus arriving at the subject-

- matter of these claims without the use of an inventive step;
- the additional features defined in claims **3-5, 14 and 15** are disclosed in **D2** (from col. 4, line 41 to col. 8, line 63, equations 5, 6, 10, 11 and claim 1). The skilled person would combine the cooperation of the control circuit and the switched capacitors of **D2** with the scaling circuit of **D1**, and therefore the subject-matter of these claims cannot be regarded as involving an inventive step;
 - the additional features defined in claims **6, 8, 11 and 12** are well-known design possibilities, and hence the subject-matter of these claims cannot be regarded as involving an inventive step;
 - the additional features defined in claim **7** are disclosed in **D1** (Fig. 4, C_F);
 - the additional features defined in claims **10 and 17** are disclosed in **D1** (col. 3, lines 29-47).

7 INDUSTRIAL APPLICABILITY

The subject-matter of claims **1-20** is industrially applicable in the field of signal processing.

8 FURTHER REMARKS

- 8.1 Although claims **1, 9, 16 and 20** have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.
- 8.2 The vague and imprecise statement in the description on page 8, lines 20-22 and on page 13, lines 20-28 implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.
